

EXHIBIT D

Feb. 22 Howell Rebuttal

**IN THE UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF DELAWARE**

In re:

FTX TRADING LTD., *et al.*,¹

Debtors.

Chapter 11

Case No. 22-11068 (JTD)

(Jointly Administered)

**REBUTTAL EXPERT REPORT OF SABRINA T. HOWELL
IN RESPONSE TO IOANNIS GKATZIMAS**

FEBRUARY 22, 2024

¹ The last four digits of FTX Trading Ltd.'s and Alameda Research LLC's tax identification number are 3288 and 4063 respectively. Due to the large number of debtor entities in these Chapter 11 Cases, a complete list of the Debtors and the last four digits of their federal tax identification numbers is not provided herein. A complete list of such information may be obtained on the website of the Debtors' claims and noticing agent at <https://cases.ra.kroll.com/FTX>. The principal place of business of Debtor Emergent Fidelity Technologies Ltd is Unit 3B, Bryson's Commercial Complex, Friars Hill Road, St. John's, Antigua and Barbuda.

TABLE OF CONTENTS

I.	INTRODUCTION	1
A.	Background and Assignment	1
B.	Qualifications	2
C.	Compensation	2
D.	Materials Considered	2
II.	Summary of Conclusions.....	3
III.	Background on SRM	5
A.	Overview.....	5
B.	Fundamental Value of SRM as of the Petition Date.....	8
C.	Liquidation Value of SRM as of the Petition Date	9
IV.	The Howell Report’s Use of Debtors’ Holdings for Estimating the ALD for SRM Is Appropriate.....	10
A.	SRM Investors Were Inherently Exposed to Risk Associated with FTX and Alameda	11
V.	Perpetual Futures Cannot Be Used for Liquidating Debtors’ SRM Holdings.....	13
A.	Perpetual Futures Do Not Transfer Digital Assets Between Parties and Therefore Cannot Be Used for Liquidating Debtors’ SRM Holdings	13
B.	Using Perpetual Futures to Reduce Debtors’ Exposure to SRM Instead of Liquidating Holdings Would Run Counter to the Goal of Liquidating the Estate	15
C.	99 Percent of the SRM Perpetual Futures Trading Volume Considered by Mr. Gkatzimas Was on Exchanges That Became Defunct or Delisted SRM Perpetual Futures Within Five Days of the Petition Date	16

I. INTRODUCTION

A. Background and Assignment

1. On December 27, 2023, I filed an expert report (the “Howell Report”) in which I estimated asset liquidation discounts (“ALDs”) and discounts for lack of marketability (“DLOMs”) for a wide range of digital assets on which customer claims are based in these Chapter 11 Cases.² The Howell Report includes my opinions with respect to SRM.

2. In the Howell Report, I estimated that in an orderly liquidation commencing on the Petition Date, the Debtors’ holdings of SRM tokens would be subject to a 58 percent ALD due to large amount of SRM tokens held by the Debtors relative to the size of the market for the token.³

3. On February 16, 2024, I received a report authored by Ioannis Gkatzimas on behalf of FTX customer TMSI SEZC Ltd. (“Gkatzimas Report”).⁴ In his report, Mr. Gkatzimas proposed an alternative set of ALDs to the Petition Time price of SRM, ranging from 12.5 percent to 33.5 percent.⁵ In particular, Mr. Gkatzimas estimated his ALDs by (i) considering the liquidation of only the SRM tokens on which customers’ claims are based,⁶ and (ii) including trading volume from SRM perpetual futures contracts in the KO calculations, based on the rationale that “for a market participant that already owns SRM tokens to exit their exposure, they can ... sell futures

² Expert Report of Sabrina T. Howell, December 27, 2023 (“Howell Report”). I also filed a Supplemental Declaration on January 28, 2024 (“Howell Supplemental Declaration”). Any abbreviations or capitalized terms not otherwise defined herein are as defined in the Howell Report.

³ Howell Report, Exhibit 3.

⁴ Declaration of Ioannis Gkatzimas, February 16, 2024 (“Gkatzimas Report”).

⁵ Gkatzimas Report, ¶ 29.

⁶ Gkatzimas Report, ¶ 9. Note that Mr. Gkatzimas’ calculation includes both locked and unlocked SRM tokens. Gkatzimas Report, Workpaper 2.xlsx, Customers’ Holdings tab.

contracts referencing SRM.”⁷ Mr. Gkatzimas does not otherwise challenge my use of the KO model for estimating ALDs or any other elements of the Howell Report.

4. I was asked by Sullivan & Cromwell LLP (“Counsel”), on behalf of the Debtors, to evaluate Mr. Gkatzimas’ methodologies and respond to the critiques of the methodologies used in the Howell Report offered by Mr. Gkatzimas.

B. Qualifications

5. Section I.B of the Howell Report summarizes my qualifications. *See* Appendix A of the Howell Report for my most recent curriculum vitae.

C. Compensation

6. I am being compensated for my time spent working on this matter, including any testimony, at my standard billing rate of \$950 per hour. Some of the research and analysis for this report was performed by Analysis Group personnel under my direction and guidance, and I receive additional compensation based on their fees. Neither my compensation nor that of Analysis Group is contingent upon my findings, the testimony I may give, or the outcome of this matter.

D. Materials Considered

7. In preparing this report, I, along with Analysis Group staff working under my direction, reviewed various documents and data sources. Appendix A to this report lists documents and data sources that I considered in preparing this report that are additional to the materials I considered in preparing the Howell Report. My work in this matter is ongoing, and I may

⁷ Gkatzimas Report, ¶ 23.

supplement this report if information that alters any of my opinions comes to my attention after this report is submitted, including at a future hearing before the Bankruptcy Court.

II. SUMMARY OF CONCLUSIONS

8. The conclusions I drew in the Howell Report remain unchanged after having reviewed the Gkatzimas Report and associated backup materials. In addition, based on my review of the Gkatzimas Report and its backup materials, as well as the materials listed in Appendix A, I have reached the following conclusions.

- SRM was created by Mr. Bankman-Fried along with FTX and Alameda. The Debtors held over 95 percent of the maximum supply of SRM, and less than three percent of the maximum supply traded freely. Given the size of the Debtors' SRM holdings relative to the size of the market, I estimated in the Howell Report that liquidating the Debtors' SRM holdings would likely be associated with a 58 percent ALD.
- The collapse of FTX also affected SRM negatively. The Serum exchange became defunct shortly after the Petition Date, eliminating SRM's fundamental value as a utility and governance token for the Serum exchange. The collapse of FTX also led to the evaporation of the existing market for SRM perpetual futures. Within five days of the Petition Date, the exchanges that accounted for 99 percent of SRM perpetual futures trading volume before the Petition Date all delisted SRM perpetual futures.
- The Howell Report's approach of estimating ALDs based on the size of the Debtors' holdings is reasonable and consistent with the fact that the Debtors will be required to liquidate all their holdings of digital assets, as I further explained in the Howell

Supplemental Declaration. Estimating ALDs based on the size of customer claims would assume that the Debtors either (i) do not liquidate their holdings of digital assets outside of those claimed by customers and other creditors or (ii) liquidate their holdings of digital assets claimed by customers and other creditors first to satisfy those claims, then liquidate their other holdings. Basing ALDs on the Debtors' holdings is also consistent with the fact that, relative to customers with claims based on liquid digital assets such as BTC, investors in SRM knowingly exposed themselves to risk specific to Mr. Bankman-Fried and FTX prior to the Petition Date.

- Perpetual futures do not transfer the underlying digital asset between counterparties during any part of the life of the contract. Therefore, perpetual futures cannot be used as an instrument for liquidating the Debtors' holdings. Moreover, establishing short positions in SRM perpetual futures while holding the underlying SRM tokens as suggested by Mr. Gkatzimas would not provide the Debtors with any immediate or expected cash proceeds as I understand is required in these Chapter 11 Cases. Furthermore, establishing such short positions would require the Debtors to transfer collateral to third-party crypto exchanges, reducing the Debtors' holdings of cash or marketable digital assets, and exposing the Debtors to counterparty risk. Finally, the trading strategy suggested by Mr. Gkatzimas would require the Debtors to retain open futures positions indefinitely, which is inconsistent with a timely resolution of these Chapter 11 Cases.
- In summary, the trading strategy suggested by Mr. Gkatzimas would (i) leave the SRM tokens on the Debtors' books, (ii) require the transfer of collateral to third-party exchanges, (iii) create new exposure to digital assets for the Debtors, leaving them with perpetual

futures positions that need to be open forever, and (iv) provide no immediate or expected cash proceeds to the Debtors.

III. BACKGROUND ON SRM

A. Overview

9. The Serum exchange was created by Mr. Bankman-Fried together with associates at FTX and Alameda.⁸ SRM is a utility and governance token for the Serum exchange.⁹ SRM is referred to as a “Sam Coin” in popular media due to its close connection to Mr. Bankman-Fried and FTX.¹⁰ I understand that Mr. Bankman-Fried had broad discretion over updates to the SRM protocol and over the unlocking schedule of SRM for individual holders of the token on FTX.¹¹ Thus, from the outset, the performance of any investment in SRM was closely tied to the fortunes

⁸ “What Is Serum? (SRM),” *Kraken*, available at <https://www.kraken.com/learn/what-is-serum-srm> (“Alameda Research, along with the FTX exchange, created Serum in 2020 and chose to build it on Solana. Sam Bankman-Fried, the founder of FTX and Serum, chose to build the decentralized exchange on Solana due to it allowing faster and cheaper transactions compared to other blockchains.”); Solana Foundation, “FTX Chooses Solana for Serum: A High-Speed, Non-Custodial Decentralized Derivatives Exchange,” *Solana*, July 26, 2020, available at <https://solana.com/news/ftx-chooses-solana-for-serum--a-high-speed--non-custodial-decentralized-derivatives-exchange>; “Overview,” *Project Serum*, available at <https://docs.projectserum.com/introduction/overview>.

⁹ “SRM Token,” *Project Serum*, available at <https://docs.projectserum.com/introduction/srm-token>.

¹⁰ Kuhn, Daniel, “Sam Bankman-Fried’s Wildest, Craziest, Dumbest Trades,” *CoinDesk*, November 07, 2023, available at <https://www.coindesk.com/consensus-magazine/2023/11/07/sam-bankman-frieds-wildest-craziest-dumbest-trades/>.

¹¹ See, e.g., Agarwal, Yash, “The forked Solana DEX Birthed from FTX’s Death: The Openbook Deep Dive,” *Medium*, January 15, 2023, available at <https://yashhsm.medium.com/the-forked-solana-dex-birtherd-from-ftxs-death-the-openbook-deep-dive-cd81d909489b> (“The Serum program update key was not controlled by the SRM DAO, but by a private key connected to FTX.”); Nelson, Danny, “FTX Hack Sparks Revolution at Serum DEX as Solana Devs Plot Alameda’s Ouster,” *CoinDesk*, November 12, 2022, available at <https://www.coindesk.com/business/2022/11/12/ftx-hack-spooks-solana-defi-community-igniting-revolution-at-alameda-controlled-serum-dex/> (“The true power over Serum rested with FTX Group, which continues to hold the program update authority keys, people familiar with the matter said.”); Lewis, Michael, *Going Infinite: The Rise and Fall of a New Tycoon*, 1st ed., W.W. Norton, 2023, pp. 246-247 (“Soon after Serum’s creation, its price had skyrocketed. [Mr. Bankman-Fried] clearly had not anticipated this. ... And so he did a very Sam thing: he changed the terms of the employees’ Serum.”).

Despite the fact that some SRM tokens were claimed to be locked, I understand from A&M that none of the Debtors’ holdings of SRM are locked. See “SRM Token,” *Project Serum*, available at <https://docs.projectserum.com/introduction/srm-token>.

of FTX and Sam Bankman-Fried. The Serum Exchange became defunct in November 2022 following the collapse of FTX and Alameda.¹² Following the collapse of FTX and Alameda, several exchanges delisted SRM from spot trading in 2022 and 2023, as I show in Exhibit 1. As I further discuss in Section V.C and Figure 2, liquidity in SRM perpetual futures markets evaporated within days of the FTX collapse after exchanges that accounted for 99 percent of pre-Petition Date trading volume delisted SRM perpetual futures. The spot price of SRM decreased from \$0.37 at the Petition Time to \$0.05 a year later.¹³

10. Over 95 percent of the maximum supply of SRM was in the possession of FTX and Alameda on the Petition Date.¹⁴ SRM comprised approximately \$3.7 billion (or 39 percent) of the face value of the Debtors' holdings and was therefore significant to the balance sheets of FTX and Alameda prior to the Petition Date.¹⁵ However, this face value is a misleading representation of the true market value of the Debtors' holdings of SRM. SRM's observed market prices are derived from a free float (the amount of tokens actually available for trading in the marketplace) of *less than three percent* of the token's maximum supply.¹⁶ Observers have argued that restricting the

¹² Bannermanquist, Judith, "Serum exchange rendered 'defunct' following the collapse of Alameda and FTX," *Cointelegraph*, November 29, 2022, available at <https://cointelegraph.com/news/serum-exchange-rendered-defunct-following-the-collapse-of-alameda-and-ftx>.

¹³ Howell Report, Exhibit 3; "Serum (SRM)," *CoinMarketCap*, accessed February 21, 2024, available at <https://coinmarketcap.com/currencies/serum> (showing SRM's price of \$0.0549 on November 11, 2023).

¹⁴ See Workpaper 1. Maximum supply is "the best approximation of the maximum amount of coins that will ever exist in the lifetime of the cryptocurrency." "Frequently Asked Questions," *CoinMarketCap*, available at <https://coinmarketcap.com/faq/>.

¹⁵ Numerator includes all Debtors' holdings associated with the at-issue tokens except Spot+ derivatives and futures. Denominator includes Debtors' holdings for all digital assets except Spot+ derivatives, futures, leveraged tokens, and tokenized stocks.

¹⁶ See Workpaper 1. See, e.g., "Introducing Free Float Supply," *Coin Metrics*, June 30, 2023, available at <https://coinmetrics.io/introducing-free-float-supply/>. For digital assets, free float is also referred to as "circulating supply." "Frequently Asked Questions," *CoinMarketCap*, available at <https://coinmarketcap.com/faq/> ("Circulating Supply is the best approximation of the number of coins that are circulating in the market and in the general public's hands. ... We've found that *Circulating Supply* is a much better metric for determining the market capitalization. Coins that are locked, reserved, or not able to be sold on the public market are coins that can't

free float for SRM and other Sam Coins was a deliberate strategy for FTX and Alameda to inflate market prices in order to increase the value of non-circulating tokens on FTX's and Alameda's balance sheets.¹⁷ Mr. Bankman-Fried himself had also commented that a strategy of allowing only a very small free float relative to the maximum supply of a token would enable the creator of the token to artificially inflate the trading price of the token and thus create collateralizable "value" for holders of the uncirculated tokens, even if the true value of the token were zero.¹⁸ SRM appears to be consistent with this strategy, which undermines the idea that the broader holdings of SRM should be valued at the observed prices of a small number of tradeable tokens.

affect the price and thus should not be allowed to affect the market capitalization as well. The method of using the *Circulating Supply* is analogous to the method of using public float for determining the market capitalization of companies in traditional investing." (Emphasis in the original.)).

¹⁷ Kuhn, Daniel, "Sam Bankman-Fried's Wildest, Craziest, Dumbest Trades," *CoinDesk*, November 7, 2023, available at <https://www.coindesk.com/consensus-magazine/2023/11/07/sam-bankman-frieds-wildest-craziest-dumbest-trades/> ("SBF [Sam Bankman-Fried] used his trading firm to be a net buyer of his own sh*tcoins. He then used those holdings to leverage up, and take out cash loans. This was a repeat strategy for SBF, which he seemingly did multiple times with tokens like Serum (SRM), Maps (MAPS), Oxy (OXY) and FTT — tokens now known as 'Sam Coins' because of his sizable ownership and direct control over the supply."); Flitter, Emily and David Yaffe-Bellany, "FTX Founder Gamed Markets, Crypto Rivals Say," *New York Times*, January 18, 2023, available at <https://www.nytimes.com/2023/01/18/business/ftx-sbf-crypto-markets.html> ("Then his [Sam Bankman-Fried's] hedge fund, Alameda Research, would buy some of these newly listed Samcoins to prop up their value[.]").

¹⁸ Alloway, Tracy and Joe Weisenthal, "Transcript: Sam Bankman-Fried and Matt Levine on How to Make Money in Crypto," *Bloomberg*, April 25, 2022, available at <https://www.bloomberg.com/news/articles/2022-04-25/odd-lots-full-transcript-sam-bankman-fried-and-matt-levine-on-crypto?embedded-checkout=true> ("[I]n like five minutes with an internet connection, you could create such a box and such a token, and that it should reflect like, you know, it should be worth like \$180 or something market cap for like that, you know, that effort that you put into it. In the world that we're in, if you do this, everyone's gonna be like, 'Ooh, box token. Maybe it's cool. If you buy in box token,' you know, that's gonna appear on Twitter and it'll have a \$20 million market cap. And of course, one thing that you could do is you could like make the float very low and whatever, you know, maybe there haven't been \$20 million dollars that have flowed into it yet. Maybe that's sort of like, is it, you know, mark to market fully diluted valuation or something, but I acknowledge that it's not totally clear that this thing should have market cap, but empirically I claim it would have market cap. ... This box is worth zero obviously. And like that, you know, you can't like keep this smart cap or something. But on the other hand, if everyone kind of now thinks that this box token is worth about a billion dollar market cap, that's what people are pricing it at and sort of has that market cap. Everyone's gonna mark to market. In fact, you can even finance this, right? You put X token in a borrow lending protocol and borrow dollars with it. If you think it's worth like less than two thirds of that, you could even just like put some in there, take the dollars out. Never, you know, give the dollars back. You just get liquidated eventually. And it is sort of like real monetizable stuff in some senses. And you know, at some point if the world never decides that we are wrong about this in like a coordinated way, right? Like you're kind of the guy calling and saying, no, this thing's actually worthless, but in what sense are you right?").

B. Fundamental Value of SRM as of the Petition Date

11. The Serum exchange reportedly allowed traders to buy and sell cryptocurrencies in a “decentralized” manner.¹⁹ SRM is a utility token with several characteristics analogous to FTX’s FTT.²⁰ Similar to how FTT’s fundamental value was tied to the existence of FTX, SRM’s fundamental value was tied to the existence of the Serum exchange. SRM’s fundamental value derived from providing benefits to users of the Serum exchange, including discounts on trading fees and interest on staked SRM, as well as participation in Serum revenues (68 percent of Serum trading fees were used to buy back and destroy (“burn”) SRM).²¹

12. Since the Serum exchange is defunct and I am not aware of any expectations of a restart of the exchange, the fundamental value of SRM is now likely negligible.²² To the extent that the failure of the Exchanges and the accompanying fraud by the founders of Serum were likely to lead to winding down the Serum exchange, the fundamental value of SRM would have also been negligible as of the Petition Date, suggesting that the discounts for SRM presented in the Howell Report may be conservative. As Mr. Gkatzimas points out, “[w]hile FTX was facing

¹⁹ Bannermanquist, Judith, “Serum exchange rendered ‘defunct’ following the collapse of Alameda and FTX,” *Cointelegraph*, November 29, 2022, available at <https://cointelegraph.com/news/serum-exchange-rendered-defunct-following-the-collapse-of-alameda-and-ftx>.

²⁰ Howell Report, ¶ 43.

²¹ Project Serum, “SRM Unlock,” *Medium*, July 29, 2021, available at <https://projectserum.medium.com/srm-unlock-8e74f23d829f>.

²² On November 15, 2022, a “fork” of the Serum exchange called OpenBook was deployed. OpenBook uses the exact codes from the Serum exchange but without any ties to FTX. I understand that the new exchange did not use SRM as its governance and utility token as of January 2023. Agarwal, Yash, “The forked Solana DEX Birthed from FTX’s Death: The Openbook Deep Dive,” *Medium*, January 15, 2023, available at <https://yashhsm.medium.com/the-forked-solana-dex-birthed-from-ftxs-death-the-openbook-deep-dive-cd81d909489b>.

questions of survival from November 2, 2022 through November 11, 2022, so too was the SRM token in tandem with FTX's distress."²³

C. Liquidation Value of SRM as of the Petition Date

13. In addition to creating Serum, Sam Bankman-Fried was a public promoter of the Serum project.²⁴ Some analysts attributed the early success of the Serum project to its connection to Mr. Bankman-Fried, FTX, and Alameda.²⁵ As the founders of SRM, FTX and Alameda held over 95 percent of SRM's maximum supply on the Petition Date,²⁶ equivalent to 394 times the average daily trading volume of SRM in the year running up to November 2, 2022.

14. As of the Petition Date, less than three percent of the maximum supply of SRM was freely tradeable.²⁷ A number of observers have argued that when only a minuscule share of tokens are traded in markets (*i.e.*, a tiny circulating float), it is inappropriate to apply the market price to

²³ Gkatzimas Report, ¶ 17.

²⁴ Sam Bankman-Fried appeared in introduction videos on the Serum website. "Media," *Project Serum*, available at <https://docs.projectserum.com/appendix/videos-serum-academy>; Shifflett, Shane, Rob Barry, and Coulter Jones, "FTX Effort to Save Itself Failed on Questionable Assets," *The Wall Street Journal*, December 5, 2022, available at <https://www.wsj.com/articles/ftx-effort-to-save-itself-failed-on-questionable-assets-11670245668> ("Mr. Bankman-Fried helped promote Serum... He hired at least one person to respond to Telegram messages where users discussed issues, while a public-relations firm that promoted FTX also helped market the new exchange, according to employees.").

²⁵ Shen, Muyao, "Serum Token Becomes Latest Project in Bankman-Fried Empire to Turn Heads," *CoinDesk*, April 28, 2021, available at <https://www.coindesk.com/markets/2021/04/28/serum-token-becomes-latest-project-in-bankman-fried-empire-to-turn-heads/> ("Some analysts have attributed the recent success of the Serum project and Solana blockchain to their association with Bankman-Fried, who garnered headlines recently for his \$135 million deal to name the basketball team Miami Heat's home arena after the FTX exchange. According to a blog post last July, FTX and Alameda support Serum and choose Solana as its foundational blockchain. 'Traders perhaps saw Alameda Research-related names as safe havens' during last week's crypto-market sell-off, said Mira Christanto, a research analyst at Messari.").

²⁶ See Workpaper 1. I understand that Debtors held both the native Solana chain SRM tokens and the ERC20 SRM tokens pertaining to 0x476c5e26a75bd202a9683ffd34359c0cc15be0ff token contract address. Therefore, I calculate the maximum supply as the sum of maximum supplies of the two versions of the token.

²⁷ See Workpaper 1.

the remaining tokens that are locked up or otherwise not circulating.²⁸ As a result, some public-facing data providers use the circulating float for their primary measure of market capitalization and offer “fully diluted market cap” as a secondary figure. For example, as of February 21, 2024, CoinMarketCap reported the market cap for SRM as \$12.1 million, while the fully diluted market cap was reported as \$467 million.²⁹

15. Despite these concerns, in the Howell Report, I nonetheless employ the market price as of the Petition Date. Using a formula from peer-reviewed literature on liquidation discounts, I conservatively estimated that in the event of an orderly liquidation of the Debtors’ holdings commencing on the Petition Date, SRM would have been subject to a 58 percent ALD.³⁰

IV. THE HOWELL REPORT’S USE OF DEBTORS’ HOLDINGS FOR ESTIMATING THE ALD FOR SRM IS APPROPRIATE

16. In the Howell Report, I based the calculation of ALDs on the size of the Debtors’ holdings of digital assets, consistent with my understanding that as part of these Chapter 11 Cases the Debtors will be required to liquidate all the digital assets they hold. As I further explained in the Howell Supplemental Declaration, it is appropriate to estimate ALDs based on the liquidation

²⁸ Morris, David Z., “The FTX Collapse Looks an Awful Lot Like Enron,” *CoinDesk*, November 16, 2022, available at <https://www.coindesk.com/layer2/2022/11/16/the-ftx-collapse-looks-an-awful-lot-like-enron/> (“[T]he value of any of those tokens reflected on Alameda or FTX’s balance sheets were effectively fictional. Very, very fictional: a leaked FTX balance sheet claimed holdings of SRM worth \$2 billion dollars, when the entire market value of the token was \$88 million.”); Levine, Matt, “FTX’s Balance Sheet Was Bad,” *Bloomberg*, November 14, 2022, available at <https://www.bloomberg.com/opinion/articles/2022-11-14/ftx-s-balance-sheet-was-bad> (“One simple point here is that FTX’s Serum holdings — \$2.2 billion last week, \$5.4 billion before that — could not have been sold for *anything like* \$2.2 billion. FTX’s Serum holdings were *vastly* larger than the entire circulating supply of Serum. If FTX had attempted to sell them into the market over the course of a week or month or year, it would have swamped the market and crashed the price. Perhaps it could have gotten a few hundred million dollars for them. But I think a realistic valuation of that huge stash of Serum would be closer to zero. That is not a comment on Serum; it’s a comment on the size of the stash.” (Emphasis in the original.)).

²⁹ “Serum (SRM),” *CoinMarketCap*, accessed February 21, 2024, available at <https://coinmarketcap.com/currencies/serum/>.

³⁰ Howell Report, Exhibit 3.

of all the Debtors' holdings of digital assets.³¹ To do otherwise would assume that the Debtors either (i) do not liquidate their holdings of digital assets outside of those claimed by customers and other creditors or (ii) liquidate their holdings of digital assets claimed by customers and other creditors first to satisfy those claims, then liquidate their other holdings.

17. I understand that (i) is not possible because the Debtors must sell all of the digital assets they hold, regardless of whether they are the basis of a claim, to create U.S. dollars to distribute among creditors.

18. Regarding (ii), if the Debtors were to ignore the market impact from liquidating their digital asset holdings, or assume that the digital assets that are the basis of claims could be liquidated first, the result would be a shortfall in asset sale proceeds that would have to be borne by other creditors. In fact, some of the creditors who would bear the brunt of this shortfall would be those holding claims to more liquid digital assets such as Bitcoin that the Debtors did not hold in sufficient quantities, while the creditors who would benefit would be those holding the more illiquid assets.

A. SRM Investors Were Inherently Exposed to Risk Associated with FTX and Alameda

19. Beyond these practical issues of an alternative liquidation strategy in which digital assets that are the basis of customer claims were somehow liquidated first, there is also an important dimension of FTX-specific risk for claims based on SRM. As I discussed in the Howell Supplemental Declaration, digital assets had different degrees of FTX-specific risk prior to the

³¹ Howell Supplemental Declaration, ¶¶ 11-14.

Petition Date.³² Digital assets that FTX and Alameda were known to hold in large quantities relative to daily trading volumes, such as SRM, were always exposed to the risk that FTX and Alameda might liquidate their holdings and crash the price of the token. For example, a customer who purchased digital assets such as Bitcoin assumed the risk of the Exchanges functioning, but not the risk of the Debtors selling Bitcoin into the market because Bitcoin is so liquid and widely held. In contrast, when investing in SRM (whether by direct purchase or by accepting it as consideration for contributing to projects sponsored by FTX and Mr. Bankman-Fried), the customer took additional risk in two dimensions. First, since the Debtors were large holders relative to the circulating supply or regular trading volume in the markets, the customer took the risk that the Debtors might choose or be compelled to liquidate the token. Second, since the Debtors created and were key supporters of Serum, the customer took the risk that the Debtors' actions (such as fraud or mismanagement) might influence the future success of Serum and thus its token.

20. It is my view that it is reasonable for the risk of being able to liquidate a particular digital asset in the market to be borne by the holders of claims based on such digital assets, and not by other customers or creditors who did not assume such risk. This risk is incorporated into the liquidation discounts that I calculate in my report, because the ALDs increase with the quantity that the Debtors must sell relative to daily trading volume.

³² Howell Supplemental Declaration, ¶ 14.

V. PERPETUAL FUTURES CANNOT BE USED FOR LIQUIDATING DEBTORS' SRM HOLDINGS

A. Perpetual Futures Do Not Transfer Digital Assets Between Parties and Therefore Cannot Be Used for Liquidating Debtors' SRM Holdings

21. Perpetual futures cannot be used for liquidating digital assets. As I discussed in the Howell Report, the underlying digital asset never changes hands as part of a perpetual futures contract.³³ This is different from a conventional futures contract, for example for a barrel of oil. A conventional futures contract entails delivery of the underlying asset (*i.e.*, the oil) at the contract's expiration. Therefore, a market participant—such as an oil producer—could lock in a price for oil at a date (the contract's expiration or delivery date) by selling a conventional futures contract to a buyer and then delivering the oil to the buyer on that delivery date at the pre-established price. In practice, most participants in conventional futures markets do not hold the contracts until expiration.

22. Perpetual futures contracts are purely financial instruments. When a trader opens a short position in SRM perpetual futures (or “sells” the perpetual futures contract in Mr. Gkatzimas' nomenclature), the trader *does not acquire the ability to sell the underlying asset*, and no cash changes hands between the trader who opens the short position and the counterparty who opens a long position.

23. While the perpetual futures position is open, there are two types of payments between the two counterparties. First, the short end of the contract pays the long end in fiat or more often stablecoin (as specified by the contract) when futures prices increase, and vice versa.³⁴

³³ Howell Report, ¶¶ 30-32.

³⁴ Howell Report, ¶¶ 30-31, fn. 37.

Second, funding payments compensate for deviations in perpetual futures prices from the price of the underlying.³⁵ When closing out the position, the parties recognize their wins and losses associated with the contract in fiat currency and stablecoin.

24. Therefore, the Debtors would not be able to liquidate SRM holdings from their books by trading perpetual futures. Moreover, as I explained in the Howell Report, while no money changes hands at the time traders open futures positions, exchanges do require traders to post collateral before opening futures positions to ensure that the trader will be able to absorb future losses associated with the position.³⁶ Therefore, to trade perpetual futures, the Debtors would need to post collateral on third-party crypto exchanges that support SRM perpetual futures trading. In practice, this may require the Debtors to transfer liquid assets (for example, fiat currency, stablecoin, or BTC) to third-party exchanges. As long as the Debtors' perpetual futures remained open, this collateral could not be liquidated. Posting collateral on third-party exchanges would expose the Debtors to counterparty risk—the risk that the third-party exchange would go bankrupt as FTX did, that the collateral would be misappropriated either by the exchange or malicious actors,³⁷ or that the contract would be delisted by the exchange in the future, forcing the position to be closed.

³⁵ Howell Report, ¶ 31, fn. 37. Specifically, the short end of the contract pays the long end the funding payment when the perpetual futures price falls below the price of the underlying, and vice versa.

³⁶ Howell Report, ¶ 30.

³⁷ Unregulated digital asset exchanges are frequently the target of cyberattacks and other fraud. Examples include the Mt. Gox hack, in which 647,000 bitcoins were stolen from the then-largest exchange by volume and resulted in the exchange's collapse, and the 2016 Bitfinex hack, in which 120,000 bitcoins were stolen. More recent examples include hacks against the BitMart, Binance, and FTX exchanges, as well as attacks against other digital asset infrastructure including decentralized exchanges and cross-chain bridges. Chainalysis, a digital asset tracing firm, found that criminal hackers stole approximately \$3.8 billion across all trading venues in 2022, up from \$3.2 billion in 2021, including \$320 million stolen from Jump Trading-backed Wormhole. See O'Neill, Patrick Howell, "A \$620 million Hack? Just Another Day in Crypto," *MIT Technology Review*, April 15, 2022, available at <https://www.technologyreview.com/2022/04/15/1050259/a-620-million-hack-just-another-day-in-crypto/>; "The Biggest Crypto Exchange Hacks: How to Make Sure You Protect Your Crypto Against Hacks," *Kaspersky*,

B. Using Perpetual Futures to Reduce Debtors' Exposure to SRM Instead of Liquidating Holdings Would Run Counter to the Goal of Liquidating the Estate

25. Mr. Gkatzimas suggests that instead of actually liquidating their SRM holdings, Debtors could “exit their exposure” to SRM by “sell[ing] futures contracts referencing SRM.”³⁸ This trading strategy suggested by Mr. Gkatzimas would provide no immediate or expected cash proceeds to the Debtors and therefore is inconsistent with the fact that the Debtors are required to liquidate all their holdings into dollars to satisfy creditor claims.³⁹ It also prevents a timely resolution of the bankruptcy proceedings and would require the Debtors to take on additional risk. Therefore, this scheme would (i) leave the SRM tokens on the Debtors’ books, (ii) require the transfer of collateral to third-party exchanges, (iii) leave the Debtors with perpetual futures positions that need to be open forever, and (iv) not provide any immediate or expected proceeds for the Debtors.⁴⁰ In Figure 1, I illustrate this through the stylized example of how selling one SRM token would have compared with holding on to the SRM token and opening a short SRM perpetual futures position on a third-party exchange, as suggested by Mr. Gkatzimas.

available at <https://www.kaspersky.com/resource-center/threats/crypto-exchange-hacks>; Cohen, Lu, “Buried Gold, Burning Trash: US Couple Admits to Hiding Hacked Crypt,” *Reuters*, August 3, 2023, available at <https://www.reuters.com/world/us/us-man-pleads-guilty-launders-crypto-stolen-bitfinex-hack-2023-08-03/>; Wilson, Tom and Pushkala Aripaka, “Jump Trading Replaces Stolen Wormhole Funds After \$320 Mln Crypto Hack,” *Reuters*, February 3, 2022, available at <https://www.reuters.com/technology/crypto-network-wormhole-hit-with-possible-320-mln-hack-2022-02-03/>; “Russian Nationals Charged With Hacking One Cryptocurrency Exchange and Illicitly Operating Another,” *U.S. Department of Justice*, June 9, 2023, available at <https://www.justice.gov/opa/pr/russian-nationals-charged-hacking-one-cryptocurrency-exchange-and-illicitly-operating-another>; “2022 Biggest Year Ever For Crypto Hacking with \$3.8 Billion Stolen, Primarily from DeFi Protocols and by North Korea-linked Attackers,” *Chainalysis*, February 1, 2023, available at <https://www.chainalysis.com/blog/2022-biggest-year-ever-for-crypto-hacking/>.

³⁸ Gkatzimas Report, ¶ 23.

³⁹ Futures contracts provide no immediate proceeds as no cash changes hands between the counterparties to the futures contract at the time the contract is opened. (In fact, the parties typically need to pay fees to the exchange to open the contract.) Moreover, unless prices can be forecast with accuracy (in which case it would be difficult to find a counterparty in perpetual futures markets), the expected payoff of a perpetual futures contract is zero.

⁴⁰ I also note that Debtors’ exposure to SRM would only be zero if the perpetual future price tracked the price of the underlying perfectly, which may not always be the case.

Figure 1
Illustration of Selling One Unit of SRM vs. Opening a Short Position in a SRM Perpetual Futures Contract at Petition Time

Trading Strategy:	Liquidate 1 SRM	Open 1 Short Position in SRM Perpetual
<i>Asset Holdings:</i>		
SRM Holdings	Decrease	Stay the Same
Futures Positions	None	Open Indefinitely
<i>Added Risk:</i>		
Collateral on 3rd Party Exchange?	No	Yes
Counterparty Risk?	No	Yes
<i>Dollar Proceeds</i>	\$0.37	\$0.00

Notes and Sources:

[1] Illustrates the characteristics of selling one SRM token in the spot market vs. opening a short position in a SRM perpetual futures contract as of the Petition Time.

[2] SRM Petition Time price from Howell Report, Exhibit 6.

C. 99 Percent of the SRM Perpetual Futures Trading Volume Considered by Mr. Gkatzimas Was on Exchanges That Became Defunct or Delisted SRM Perpetual Futures Within Five Days of the Petition Date

26. As I have argued above, implementing the trading strategy suggested by Mr. Gkatzimas would be neither practicable for the Debtors, nor achieve the stated goal of liquidating *all* of the Debtors' digital asset holdings. Beyond these problems with Mr. Gkatzimas' suggested trading strategy, it would not have been reasonable to expect the same level of liquidity in the SRM perpetual markets to persist after the Petition Date given Serum's dependence on FTX and Mr. Bankman-Fried. Therefore, Mr. Gkatzimas also vastly overstates the amount of liquidity in the SRM perpetual markets that would have been available for the Debtors after the Petition Date.

27. In fact, the collapse of FTX led to the evaporation of the existing market for SRM perpetual futures. As I show in Figure 2, within five days of the Petition Date, the exchanges that accounted for 99 percent of SRM perpetual futures trading volume before the Petition Date all

delisted SRM perpetual futures.⁴¹ Therefore, substantially none of the trading volume in SRM perpetual futures that Mr. Gkatzimas discusses would have been available to the Debtors to implement the trading strategy suggested by Mr. Gkatzimas. As a result, the trading strategy suggested by Mr. Gkatzimas would not in fact have been available to the Debtors shortly after the Petition Date. The evaporation of these markets is consistent with the uncovered fraud at FTX causing a crisis of confidence in Mr. Bankman-Fried’s SRM project. Given the close ties between Mr. Bankman-Fried and SRM I discussed in Section III, as of the Petition Date—following the collapse of FTX—it would have been reasonable to expect decreased investor interest in SRM and SRM perpetual futures.

Figure 2
Delisting of SRM Perpetual Futures Contracts Included in Mr. Gkatzimas’ Dataset

Exchange	Total Volume (Units, MM)	Share of Total Volume	Delisting Date	Currently Trading
[1] Binance	10,791	62.2%	11/15/2022	No
[2] FTX	3,244	18.7%	11/11/2022	No
[3] Huobi	836	4.8%	11/14/2022	No
[4] Bybit	806	4.6%	11/15/2022	No
[5] OKEEx	535	3.1%	11/14/2022	No
[6] KuCoin	474	2.7%	11/15/2022	No
[7] Phemex	392	2.3%	11/15/2022	No
[8] AscendEX	84	0.5%	11/14/2022	No
[9] MEXC	80	0.5%	1/4/2024	No
[10] Okcoin	73	0.4%	Undefined*	No
[11] Delta Exchange	23	0.1%	11/10/2022	No
[12] Gate.io	10	0.1%	2/7/2024	No
[13] BitMEX	1	0.0%	Undefined*	No
Total	17,350	100.0%		

Notes and Sources:


Total Volume refers to the aggregate volume of SRM perpetual future contracts (in million units) traded on a given exchange between November 2, 2021 and November 1, 2022. Historical trading volume data are from Gkatzimas Report backup materials.

⁴¹ I am not aware of any exchanges that currently offer trading in SRM perpetual futures. See “Serum Markets—Perpetual,” *CoinMarketCap*, accessed February 21, 2024, available at <https://coinmarketcap.com/currencies/serum/#Markets>.

* As the SRM perpetual futures contract is no longer traded and a delisting announcement could not be identified, the asset is considered delisted with an undefined date.

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- [2] Digital asset is considered delisted on FTX after the Petition Date.
- [3] “HTX to Delist SRM USDT-margined Perpetuals,” *HTX* (formerly Huobi), November 13, 2022, available at <https://www.htx.com/support/en-us/detail/34922723075846>; “Futures,” *HTX* (formerly Huobi), accessed February 18, 2024, available at <https://www.htx.com/en-us/markets/?tab=dm>.
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- [7] “Phemex is Delisting RAY/USD and SRM/USD Contract Trading Pairs,” *Phemex*, November 14, 2022, available at <https://phemex.com/announcements/phemex-is-delisting-rayusd-and-srmusd-contract-trading-pairs>; “Contract,” *Phemex*, accessed February 18, 2024, available at <https://phemex.com/markets?tabType=Contract>.
- [8] “AscendEX Will Delist SRMUSDT Perpetual Futures Contract,” *AscendEx*, November 14, 2022, available at <https://ascendex.com/en/support/articles/76883-ascendex-will-delist-srmusdt-perpetual-futures-contract>; “Futures Market,” *AscendEx*, accessed February 18, 2024, available at <https://ascendex.com/en/markets/futures>.
- [9] “MEXC Will Delist ATOR, SAMO, SRM and HT USDT-M Perpetual Futures (January 4),” *MEXC*, January 4, 2024, available at <https://www.mexc.com/support/articles/17827791512585>; “Futures,” *MEXC*, accessed February 18, 2024, available at <https://www.mexc.com/markets/contract>.
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Dated: February 22, 2024



Sabrina T. Howell

Appendix A**Additional Materials Considered****Legal Documents**

Declaration of Ioannis Gkatzimas and produced documents, February 16, 2024.

Expert Report of Sabrina T. Howell and produced documents, December 27, 2023.

Supplemental Declaration of Sabrina T. Howell, January 28, 2024.

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Exhibit 1

SRM Delisting From Exchanges

	Exchange	Delisting Month
[1]	Binance	November 2022 - August 2023
[2]	Binance.US	December 2022
[3]	Bitfinex	December 2022
[4]	CEX.io	May 2023
[5]	KuCoin	October 2023
[6]	OKX	April 2023 - October 2023
[7]	Upbit	April 2023

Notes and Sources:

- [1] “Crypto Exchange Binance Delists Serum Trading Pairs Amid FTX Connection,” *Binance Square*, November 25, 2022, available at <https://www.binance.com/en/feed/post/90475> (“Cryptocurrency exchange Binance will delist three Serum (SRM) trading pairs as the fallout from FTX's collapse continues, according to an announcement on Friday. The exchange will terminate trading of the SRM/BNB, SRM/BTC and SRM/USDT trading pairs on Nov. 28 ... The majority of SRM trading volume takes place on Binance, according to CoinMarketCap, although the token is still listed on Kraken, Kucoin and Gate.io.”). “Binance Will Delist SNM, SRM and YFII on 2023-08-22,” *Binance*, August 15, 2023, available at <https://www.binance.com/en/support/announcement/binance-will-delist-snm-srm-and-yfii-on-2023-08-22-f43511a4c1d347a8a2dd1efbdd2fe716> (“Based on our most recent reviews, we have decided to delist and cease trading on all trading pairs for the following tokens at 2023-08-22 03:00 (UTC): ... Serum (SRM)”).
- [2] “Binance.US Will Delist Serum (SRM) on December 20, 2022,” *Binance.US*, available at <https://support.binance.us/hc/en-us/articles/10830815940631-Binance-US-Will-Delist-Serum-SRM-on-December-20-2022> (“Based on our most recent review, Serum (SRM) will be delisted from Binance.US on December 20, 2022. Please note: SRM deposits on Binance.US will be closed on December 20, 2022 at 9 p.m. EST. Any deposits of SRM after this time will not be credited to your account. Withdrawals will remain open. SRM/USD and SRM/USDT trading pairs will be removed on December 20, 2022 at 10 p.m. EST.”).
- [3] “Bitfinex Delists 6 Tokens,” *Bitfinex*, December 20, 2022, available at <https://www.bitfinex.com/posts/876> (“In line with our commitment to delivering the best trading experience, we are delisting Celsius Network (CEL), Serum (SRM) ...”).
- [4] “Delisting notice,” *CEX.io*, available at <https://support.cex.io/en/articles/7229240-delisting-notice> (“Due to low or no trading activity, we’ve decided to delist 31 cryptocurrencies [including SRM] ... On May 4, 2023, these 31 assets will be delisted from CEX.IO. Withdrawals will remain operational.”).
- [5] “ST: KuCoin Will Delist Certain Projects,” *KuCoin*, October 24, 2023, available at <https://www.kucoin.com/announcement/en-st-kucoin-will-delist-certain-projects-20231024> (“According to the Special Treatment Rules of KuCoin, the following projects have been disqualified, and the tokens will be removed from the platform [list includes SRM] ... The above mentioned trading pairs will be delisted at 06:00:00 on October 26, 2023 (UTC).”).

Exhibit 1

SRM Delisting From Exchanges

Notes and Sources (Cont.):

[6] “OKX to delist several spot trading pairs,” *OKX*, April 6, 2023, available at <https://www.okx.com/help/okx-to-delist-several-spot-trading-pairs> (“[W]e will be delisting several projects that do not fulfill our listing criteria [list includes SRM/BTC, set to be delisted on April 11, 2023]”). “OKX to delist KOL, GM, SRM, UME, VALUE, MITH, JFI, and SOS spot trading pairs,” *OKX*, October 9, 2023, available at <https://www.okx.com/help/okx-to-delist-kol-gm-srm-umee-value-mith-jfi-and-sos-spot-trading-pairs> (“We will delist the above-mentioned trading pair [including SRM/USDT and SRM/USDC] at 8:00 - 8:30 am UTC on October 16, 2023.”).

[7] “APE Trading at Premium on Upbit,” *Medium*, April 13, 2023, available at <https://medium.com/@coinness.gl/apex-trading-at-premium-on-upbit-c26f7dbel1edf> (“Earlier on Wednesday, Upbit also announced that it will delist OmiseGo (OMG) and Serum (SRM) ... In the case of Serum, Upbit cited operational issues with the project and the current impossibility of using the SRM protocol.”).